

## **ABSTRACT OF THE DISCLOSURE**

A method and apparatus for substantially smoke free separation and recovery of zinc from galvanizing skimmings and for refining the resulting ash to a by-product form. An essentially closed housing defining a skimmings receiving chamber and a skimmings processing chamber with a bottom opening is placed on or above a galvanizing kettle and extends into the molten zinc of the kettle so that molten zinc is present with a skimmings processing chamber. A motor driven agitator shaft having paddles is rotated within the skimmings processing chamber so that the ends of the paddles enter the molten zinc during each shaft revolution and enhance melting and recovery of the zinc. The processed ash content of the skimmings is propelled by the paddles from a skimmings inlet region of the housing chamber to a processed ash discharge region and is then conveyed to a vibratory separator which separates residual zinc from the ash, conveys the residual zinc back to the skimmings processing chamber for re-processing and discharges the refined ash as a by-product.